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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,833	08/17/2006	Norman Matheson Lindsay	COLGRA P67AUS	2808

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CONCORD, NH 03301

EXAMINER

JONES, MARCUS D

ART UNIT	PAPER NUMBER
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3714

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,833	Applicant(s) LINDSAY, NORMAN MATHESON	
	Examiner MARCUS D. JONES	Art Unit 3714	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 August 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 33-62 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 33-62 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>IDS(17 August 2006), IDS(4 May 2007)</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

The amendment filed on 8/17/2006 is acknowledged and has been entered.

Claims 1-32 are cancelled.

Claims 33-62 are currently pending.

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:
 1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
4. **Claims 33-37, 42-52, and 57-62 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. (US 4,136,387), Lindsay (US PGPub 2002/0103035), Poillon et al. (US 5,056,791) and Huston et al. (US 5,364,093).**

In reference to claims 33 and 48, Sullivan discloses: A method and system for deriving representations of the individual outcomes of launching objects into an area that contains a plurality of mutually-spaced object- sensing means, wherein each sensing means detects the presence of any of the launched objects that arrive in the location of that respective sensing means (see Fig 2, and col 3, ln 8-10). Sullivan is silent is predicting the outcome of a launched object. Lindsay teaches predicting the outcome of a golf ball's trajectory (pg 1, par 11). It would have been obvious to a person having ordinary skill in the art to combine the teachings of Sullivan and Lindsay to yield the predictable result of predicting the trajectory of a golf ball based on the measure parameters of the launched golf ball. Sullivan and Lindsay are silent on using the prediction to locate the object in the event that the sensing means fails to detect the presence of the object. Poillon teaches projecting an image of the ball flight path that the ball would have taken on a golf range (col 4, ln 3-6). It would have been obvious to a person having ordinary skill in the art at the time of the invention to combine the teachings of Sullivan, Lindsay and Poillon to yield the predictable result of displaying the predicted path of the ball to a user. Sullivan, Linday and Poillon are silent on using adaptive error correction between where the ball is predicted to have landed and where it actually lands. Huston teaches using error correction to continuously recalculate the distance to a golf cup (col 2, ln 40-43). It would have been obvious to use error correction in a golf ball flight path prediction system to make a better prediction each time the ball is launched.

It would have been obvious to a person having ordinary skill in the art at the time of the invention to combine the teachings of Sullivan, Lindsay, Poillon and Huston to yield the predictable result of an accurate golf shot prediction system for tracking the location of each golf ball.

In reference to claims 34 and 49, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Lindsay further teaches wherein the representation provided in respect of the individual objects for which the presence as aforesaid is detected by any of the sensing means, is of the actual outcome realized (pg 2, par 20).

In reference to claims 35 and 50, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Sullivan further discloses wherein the measurements of velocity vectors of each object at launch are derived by detecting light-change resulting from passage of that object through detection planes defined by respective slit-apertures (col 1, ln 46-49).

In reference to claims 36 and 51, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Lindsay further teaches wherein each detection plane involves means for emitting light as a beam through the respective slit-aperture and means for sensing light from the beam reflected back through that same slit-aperture (pg 2, par 21).

In reference to claims 37 and 52, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Sullivan further discloses wherein each object carries at least one retro-reflective element for reflecting light from the beam back to the light-sensing means (col 2, ln 64-65).

In reference to claims 42 and 57, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Lindsay further teaches wherein the derived representations are provided in the form of video display (pg 4, par 45).

In reference to claims 43 and 58, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Poillon further teaches wherein the objects are golf balls that are launched by a golfer in successive strikes (col 4, ln 14-18).

In reference to claims 44 and 59, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Lindsay further teaches wherein the prediction of the outcome of launching of each individual ball is computed in accordance with velocity and spin vectors of the ball at launch (pg 1, par 11).

In reference to claims 45 and 60, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Poillon further teaches wherein the predicted outcome is represented in terms of the location the ball is predicted to reach within the area (col 4, ln 3-6).

In reference to claims 46 and 61, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. Poillon further teaches wherein the area is a golf range used by a plurality of golfers, and each golfer is provided individually with a representation of the outcome of his/her strikes (col 4, ln 3-6).

In reference to claims 47 and 62, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims. It would have been a matter of obvious design choice to use a probability assessment to determine the owner of a golf ball based on the predicted and actual outcomes. For example, there is no benefit to using a probability

assessment versus a numbered RFID tag system that records tag numbers in association with a particular golfer.

5. Claims 38-40 and 53-55 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. (US 4,136,387), Lindsay (US PGPub 2002/0103035), Poillon et al. (US 5,056,791) and Huston et al. (US 5,364,093) as applied to the claims above, and further in view of Gordon (US 5,419,565).

In reference to claims 38 and 53, Sullivan, Lindsay, Poillon and Huston teach all the elements of this claim except sensing the presence of an object by impact. Gordon teaches using impact sensors to determine the location of impact and speed of an object (col 2, ln 19-23).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to combine the teachings of Sullivan, Lindsay, Poillon, Huston and Gordon to yield the predictable result of using an impact sensor to locate where a golf ball has landed after launch.

In reference to claims 39, 40, 54 and 55, Sullivan, Lindsay, Poillon, Huston and Gordon teach all the elements of these claims. Gordon further teaches using piezo-electric cable for sensing impact (col 1, ln 67 – col 2, ln 5). The piezo-electric cable produces electrical signals which are used to provide visual and audio location information.

6. Claims 41 and 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sullivan et al. (US 4,136,387), Lindsay (US PGPub 2002/0103035), Poillon et

al. (US 5,056,791) and Huston et al. (US 5,364,093) as applied to the claims above, and further in view of Yong et al. (US PGPub 2002/0177490).

In reference to claims 41 and 56, Sullivan, Lindsay, Poillon and Huston teach all the elements of these claims except the object carrying a RFID tag and RFID sensing means. Yong teaches using a RFID tag and a RFID sensor to detect the presence of a golf ball (pg 1, par 18).

It would have been obvious to a person having ordinary skill in the art at the time of the invention to combine the teachings of Sullivan, Lindsay, Poillon, Huston and Yong to yield the predictable outcome of detecting that an object has entered an area using an RFID system.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to MARCUS D. JONES whose telephone number is (571)270-3773. The examiner can normally be reached on M-F 9-5 EST, Alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Xuan Thai can be reached on 571-272-7147. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 3714

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Marcus D. Jones/

Examiner, Art Unit 3714

/XUAN M. THAI/

Supervisory Patent Examiner, Art Unit 3714